EPA Comment #15: Page 5-20: The SDEIS states that "mercury was not included in the GoldSim model, as insufficient data and a general lack of definitive understanding of mercury dynamics prevented modeling mercury like the other solutes." It also states that "regardless, the NorthMet project Proposed Action would still need to demonstrate consistency with the mercury evaluation criteria (see Section 5.2.2.1)." Given the absence of modeling data for mercury, it is unclear how consistency with the mercury evaluation criteria would be determined.

> **Recommendation:** The FEIS should either provide a supporting rationale that explains why elemental mercury does not warrant modeling, and how consistency with mercury evaluation criteria will be determined; or include modeling and evaluation of elemental mercury. If GoldSim is not suitable to model this pollutant, elemental mercury can be modeled using a different water quality model, such as the Water Quality Analysis Simulation Program (WASP), which is commonly used by EPA to model elemental mercury.

EPA Issue #10: Modeling and mitigation measures for mercury releases in the Lake Superior watershed can use a mass-balance approach, if this is combined with adaptive management to assure future mitigation of releases as needed.

- Action: Co-lead agencies agree to use adaptive management.

Response to EPA Comment #15: No elemental mercury releases are anticipated from water-related mining or processing operations for this project.

The FEIS assesses consistency with the 1.3 ng/L mercury evaluation criterion by evaluating projected WWTP and WWTF effluent quality. It also evaluates changes in mercury concentrations near the Fond du Lac reservation boundary where the 0.66 ng/L standard applies.

The FEIS assesses project-related mercury contributions using a total mercury, mass-balance methodology. This approach was identified as the appropriate analytic tool for predicting mercury concentrations during scoping of this EIS and it is a common, reliable, analytical tool used by agencies to assess mercury impacts in EISs. This estimation method is preferred over a detailed mechanistic model because it incorporates the important input and removal processes for mercury, it is transparent with regard to data inputs, it typically provides conservative estimates of aqueous mercury concentrations, and it allows for easy assessment of the effect of changing parameter values on mercury concentrations.

The Reverse Osmosis (RO) treatment is expected to discharge mercury at or below the mercury standard of 1.3 ng/L, which includes all surface water that would be discharged at the Plant Site, including water used for flow augmentation. Under the NorthMet Project Proposed Action mercury loadings from the Mine Site are projected to decrease, and the project's combined mercury contributions from the Embarrass River and Partridge River to the St. Louis River are unchanged when modeled at the Fond du Lac reservation boundary. Therefore, the potential effects are less than significant, and the mass balance approach is appropriate to provide a reasonable estimate of potential contributions for purposes of environmental review given these circumstances.

<u>Additional Information</u>

- West Pit inflows to the Mine Site WWTF are not projected to exceed the 1.3 ng/L water quality standard during operations or closure; RO would further reduce these concentrations.

- The WWTP at the Plant Site would use mercury-capturing greensand filtration for pretreatment prior to RO.
- Adaptive management would be implemented as necessary based on monitoring for total mercury to determine whether the treated water could be discharged to surface waters, or whether some additional treatment is needed.
- The Proposer has identified the following adaptive management strategies:
  - Pretreatment modifications such as chemical scavenger addition to obtain additional metals;
  - Use of tighter RO membranes for the primary RO system;
  - Treatment of some portion of the VSEP permeate by the primary RO system to further remove some dissolved constituents;
  - Addition of polishing treatment units for removal of trace metals (e.g., ion exchange).